AUDIO LIMITING CIRCUIT

Abstract of the Disclosure

An audio limiting circuit capable of satisfying frequency dependent limits and time domain constraints, is disclosed. In one illustrative embodiment, an input node receives an unattenuated input signal and a system modeling filter predicts the amount, if any, by which the sound pressure level that would be generated by an acoustic transducer in response to the unattenuated input signal, would exceed one or more predetermined limits. In that embodiment, an energy detector separates the excess predicted sound pressure level into one or more frequency bands and calculates the average acoustic energy associated with each band. A gain logic block determines an attenuation factor based on whether one or more of the predetermined limits has been exceeded and the attenuation factor values are smoothed to minimize abrupt changes to the unattenuated input signal. A delay buffer delays the unattenuated input signal values. Finally, in the embodiment described here, the smoothed attenuation factor values are synchronized with and applied to the delayed input signal values and the resulting attenuated signal is transmitted to an output node and ultimately to one or more acoustic transducers.

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